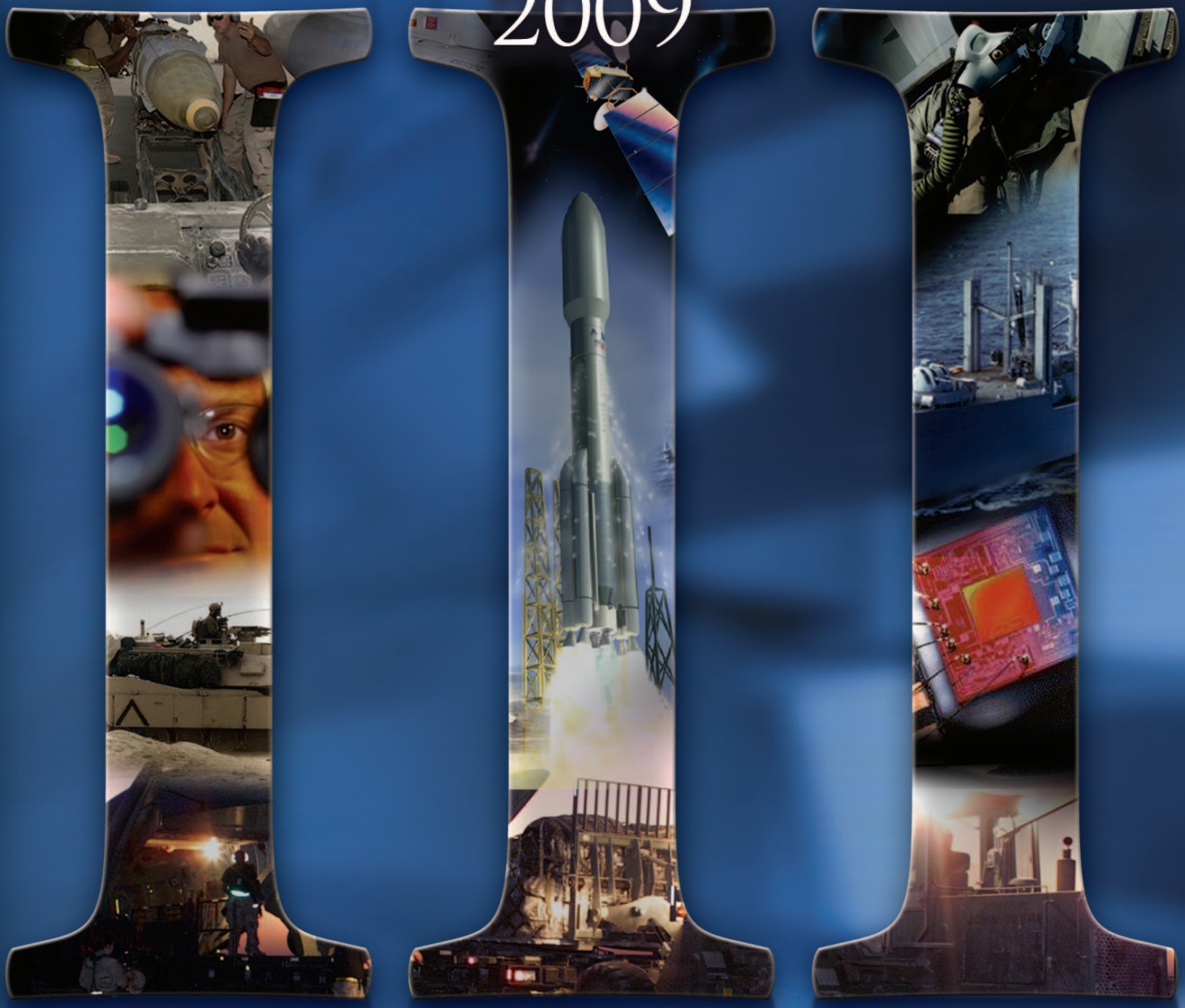
Defense Production Act
Title III
2009



Advancing the Industrial Base to Defend the Nation

Welcome

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What began in 1950 as a way to mobilize economic resources during the Korean War has evolved today into a dynamic program, proven to enhance our Department of Defense, and strengthen domestic resources in an ever-competitive commercial market.

From our successful initiatives, to our complete portfolio, Title III projects focus on accelerating transition of new technologies from research and development, to efficient and affordable production, and finally inserting these technologies into defense systems.

As part of our ongoing mission to identify opportunities and methods for advancing the industrial base, we invite you to contact us with your ideas, projects, and innovations.

Who We Are

The Title III Program is a Department of Defense-wide initiative under the Director of Defense Research and Engineering (DDR&E). The Air Force serves as the Executive Agent for the Title III Program within the Department of Defense. The Title III Program Office, located at Wright-Patterson AFB, Ohio, is a component of the Manufacturing Technology Division of the Air Force Research Laboratory.

Title III promotes production capabilities that would otherwise be inadequate to support the material requirements of defense programs in a timely and affordable manner. Title III focuses on materials and components that could be used in a broad spectrum of defense systems. The direct and indirect benefits to defense programs resulting from Title III initiatives are substantial. Moreover, Title III projects create numerous economic and technological benefits for domestic industries and consumers.

Title III Defined

Our Mission

As outlined in Title III of the Defense Production Act of 1950, the mission of the DPA Title III Program is to create assured, affordable, and commercially viable production capabilities and capacities for items essential for national defense. This crucial mission is accomplished by support of these program objectives:

- Create, maintain, expand or modernize the production capabilities of domestic suppliers whose technologies and products are critical to the nation's security;
- Increase the supply, improve the quality, and reduce the cost of advanced materials and technologies;
- Reduce U.S. dependency on foreign sources of supply for vital materials and technologies; and
- Strengthen the economic and technological competitiveness of the U.S. defense industrial base.

SCOPE

The Title III Program plays an important role in the advancement of domestic production capabilities for a wide range of leading edge technologies necessary to strengthen our national security. The Title III Program:

- Provides financial incentives to industry to make investments in production capabilities and resources;
- Executes projects ranging from process improvement to production plant construction; and
- Targets the most important elements of production as they relate to both the nation's needs and the industry business model.

Bottom Line

The Title III Program complements Department of Defense expenditures which develop new technologies to improve U.S. defense capabilities. Title III strives to ensure that these new technologies can be produced at affordable costs and in sufficient quantities by domestic firms to meet defense needs. Authorities granted through the Defense Production Act enable the DoD to utilize funding options and methods that would otherwise be unavailable in support of industrial enterprise and national security objectives.

Candidate Guidelines

Candidate projects are evaluated in terms of DPA criteria for Title III projects:

1. The industrial resource or critical technology item is essential to the national defense;

2. Without Presidential action under the Title III authority, United States industry cannot reasonably be expected to provide the capability for the needed industrial resource or critical technology item in a timely manner;

3. Title III incentives are the most cost-effective, expedient, and practical alternative methods for meeting the need; and

4. The combination of the United States national defense demand and foreseeable non-defense demand for the industrial resource or critical technology item is greater than the output of domestic industrial capability, as determined by the President, including the output to be established with the Title III incentives.

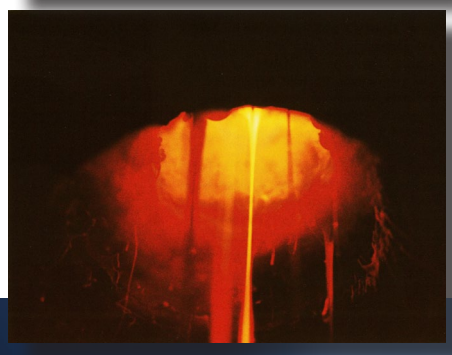
For additional information about Title III opportunities, please see the last page of this catalog or visit http://www.acq.osd.mil/ott/dpatitle3/.

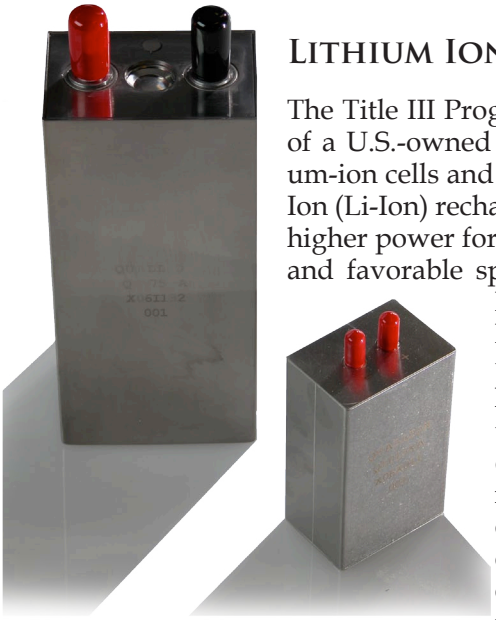
Title III initiatives

These active Title III projects are the focus of significant resources due to the pivotal nature of the materials and technologies being developed:

Beryllium Production

When this project reaches completion, the United Sates and its allies will be assured of an uninterrupted supply of primary (high purity) beryllium metal for defense and civilian utilization. Current inventories of National Defense Stockpile beryllium ingots are projected to be exhausted in the near future. Imports of beryllium cannot meet the purity levels required for many defense applications. Essential strategic uses, where there is no suitable substitute for high purity beryllium include: airborne Forward Looking Infrared (FLIR) systems for fighter aircraft and attack helicopters; guidance systems on existing strategic missiles; surveillance satellites; ballistic missile defense systems; and reflectors for high flux, nuclear test reactors. This cost share project with industry will create a new primary beryllium production facility and will ensure continuous availability of high purity beryllium metal.





Lithium Ion Battery Production

The Title III Program is supporting the development of a U.S.-owned domestic source for prismatic lithium-ion cells and batteries for spacecraft use. Lithium Ion (Li-Ion) rechargeable battery technology provides higher power for longer durations with lower weight and favorable space constraints when compared to Nickel Cadmium (NiCd) or Nickel Hydrogen (NiH) rechargeable batteries. The Li-Ion battery offers the highest energy/power package of the developed batteries today. Additional advantages include better recharging capability with no memory effect and increased temperature operating ranges. This technology offers designers a weight saving option when compared to other battery types for overall weapon systems performance.

Silicon Carbide Monolithic Microwave Integrated Circuit Devices

The goal of the MMIC project is to establish a domestic supplier of low cost, high performance silicon carbide (SiC) monolithic microwave integrated circuits (MMICs) that can satisfy military requirements for advanced radar systems. The project will demonstrate improvements in the characteristics of 100mm SiC substrate and epitaxial materials and processes to enable high yield, high performance and reliable SiC MMICs that can be produced at an affordable cost. The project will develop and demonstrate substrates and epitaxial structures with defect densities commensurate with high yield production of high performance, reliable SiC MMICs. SiC MMICs can significantly enhance the information gathering capabilities of next generation military radar systems.

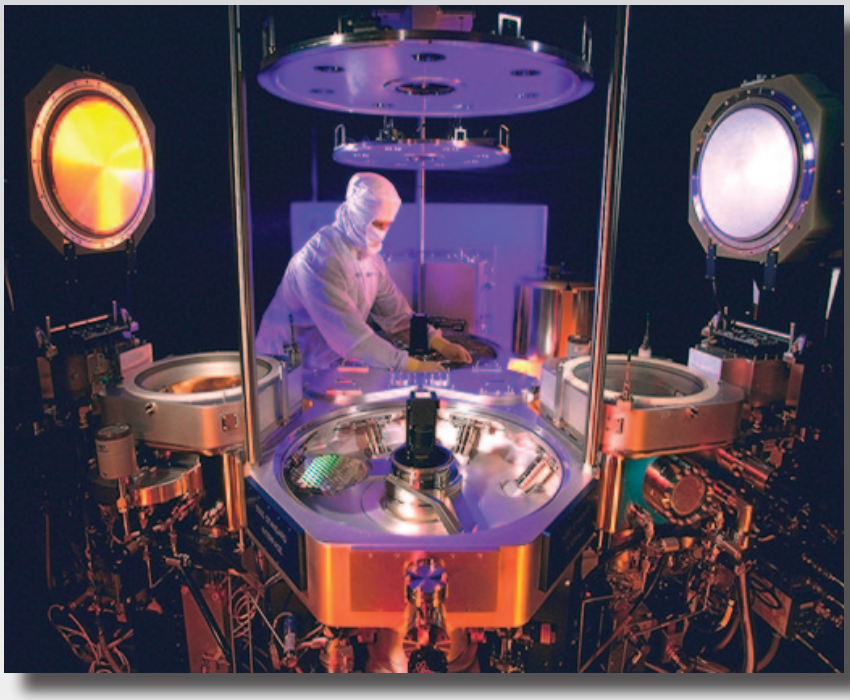
Traveling Wave Tube Amplifiers for Space

This Title III venture is focusing on leveraging proven manufacturing processes to produce K-band Traveling Wave Tube Amplifiers (TWTAs) of high quality with improved manufacturing yield at reduced cost for DoD applications. A TWTA is a vacuum electronic device whose function is to amplify a radio-frequency signal. K-band TWTAs provide superior signal strength and larger bandwidth compared to today's satellite communications. Currently only a single foreign source for K-band TWTAs exists. Advancements in the domestic production capability for K-band TWTAs will support existing and future military and commercial requirements. DoD satellites using K-band TWTAs will support the growing need for real-time information and controls among deployed assets.

CORNERSTONE TITLE III PROJECT
RADIATION HARDENED MICROELECTRONICS

Title III project ensures the availability of Radiation Hardened Microelectronics for DoD

The Mission Challenge:
Electrical circuitry in space is highly susceptible to degradation from natural or nuclear weapon-induced radiation. With greater performance desired for satellites and computers in space, the systems are becoming smaller and more advanced, but the microelectronics required for these smaller systems are more vulnerable to radiation damage.



The Production Dilemma:
Due to the evolving global industrial market, the Department of Defense (DoD) was at risk of losing access to qualified domestic manufacturers of these vital microelectronics. The two remaining U.S. companies needed to improve their production capabilities by at least two generations of technology and establish production capacity to meet future DoD needs.

The Program Accomplishment:
Through the Title III Radiation Hardened Microelectronics (RHM) Accelerated Technology Development (ATD) Capital Expansion (CAPEX) Program, Title III and the participating companies invested well over $200 million in sophisticated, state-of-the-art microelectronics production tools and facilities that met the needs and functions of both companies and the DoD. The CAPEX program successfully established production capability concurrently with development of radiation hardened process technologies through the efforts of the Defense Threat Reduction Agency.

The Impact On National Defense:
This cornerstone Title III project has provided the Department of Defense with the required RHM to ensure that key military systems can perform in the combined nuclear and natural radiation environments expected during mission duration. Maintaining production capacity of these essential components in the United States is of vital national importance, and with the conclusion of the technical phases of this program, U.S. military power will be guaranteed on future battlefields.

Title III Portfolio

The Title III Program supports a wide range of projects and initiatives that will strengthen the U.S. industrial base, rise to the dynamic challenges of national defense, and push the boundaries of technology and performance ever forward.

Atomic Layer Deposition (ALD) Hermetic Coatings Project

ALD is a deposition technique that lays down protective films one atomic layer after the other directly onto essential circuits, thus eliminating the need for costly and inefficient protective encapsulates. The purpose of this program is to establish and expand a domestic industrial base capability to apply near-hermetic quality environmental coatings to both military and commercial microelectronics. Compared to traditional hermetic enclosures, microelectronic protection through ALD coatings will result in increased corrosion protection, reduced size, weight and protection cost as well as increase the operational life of the circuits.

ALON® and Spinel Optical Ceramics

Military weapon platforms such as the C-17 and High-Mobility Multipurpose Wheeled Vehicle (Humvee) require lighter weight, higher performance, and lower cost optical materials. Aluminum oxynitride (ALON®) and magnesium aluminate spinel (spinel) are extremely durable optical ceramics with excellent ballistic and transmission capabilities that are used in military applications for transparent armor, missile domes, and infrared windows. ALON® and spinel components demonstrate optical, physical, and mechanical characteristics similar to today's standard sapphire; however, they are producible in larger sizes, higher quantities, more complex geometries, and ultimately at lower costs than are achievable with sapphire. This is primarily due to the manufacturing processes, which utilize well-understood, conventional ceramic powder processing techniques. ALON® and spinel optical ceramics are currently being used for infrared (IR) window and dome applications where sapphire is not a producible or affordable option. Title III is supporting an initiative to establish an integrated, flexible manufacturing process capable of producing these two extremely durable, transparent materials in the shapes and sizes required for aircraft transparencies, missile domes, reconnaissance windows, and transparent armor applications. Emphasis will be placed on increasing size, quality, yield, and affordability of both ALON® and spinel materials, and on facilitating component evaluation, qualification, and insertion.

Armor and Structures Transformation

The excellent strength-to-weight and corrosion-resistance properties of Titanium make it useful for many structural applications. It also has excellent ballistics properties that, along with the low weight, make it ideal for armor. Due to large increases in commercial aerospace demand for titanium, lead times for titanium have grown to over one year, while costs have more than tripled. By working outside the aerospace titanium supply chain, this Title III program will help reduce cost and shorten delivery lead-times for structural titanium and titanium armor. The initial effort will focus on implementing the capability to direct-roll titanium in widths and thicknesses that can be used for armor tiles on military ground vehicles.

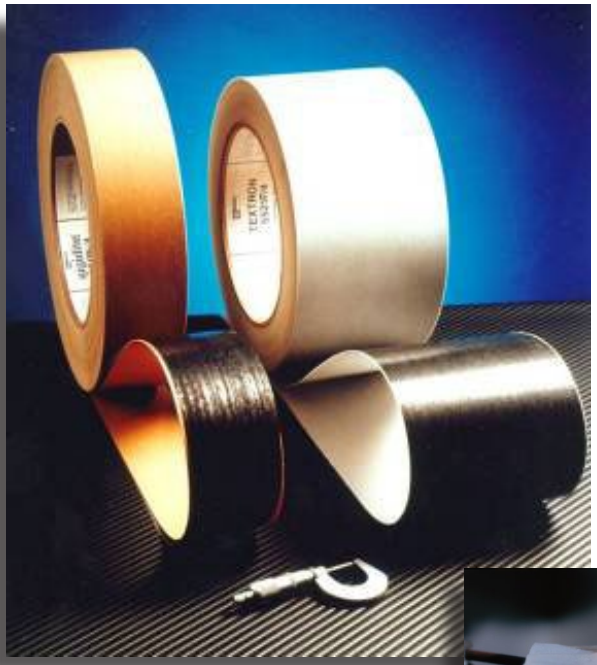
Title III Portfolio

Coal-Based Carbon Foam

This material is an inexpensive, lightweight, fire-resistant, impact-absorbing material which can be fabricated in a variety of shapes, sizes and densities. It replaces conventional materials which are higher cost, lower structural capability, hazardous for fire, and heavier. Its electrical conductivity can be varied over nine orders of magnitude, and it has a low coefficient of thermal expansion. Carbon foam's applications include replacing components in naval ship exhaust and ventilation systems and rapid development of manufacturing tooling. It exhibits similar properties as other materials at a lower cost, and outperforms other products at noise reduction, fire resistance, impact resistance, energy absorption, and thermal properties. The goal of this Title III effort is to expand the domestic production capability for coal-based carbon foam to meet DoD needs for blast mitigation, hot structure applications, and low-cost tooling.

Continuous Filament Boron Fiber

Boron fiber is an essential material for several defense systems, and there is only one small domestic producer of this material. Preventing material shortages and mitigating potential risks of escalating production costs through optimal production rates were the focus of this Title III project. Boron fiber is needed to support current and future military requirements for aircraft structure reinforcement and repair. Also, several emerging applications may be able to take advantage of this unique material, which has high compressive stiffness and strength. This project has emphasized leveraging mature, proven commercial manufacturing processes to produce boron fiber of high quality, adequate volume, and at a reduced cost for DoD applications.



Flexible Aerogel Materials

This Title III venture established affordable production by a domestic supplier of flexible aerogel materials. Aerogels are nanoporous solids with up to 99% open porosity often called "frozen smoke." The nano-scale lattice and pores provide high performance with minimal weight and space. Military applications are expected for high temperature thermal insulation, acoustic protection, infrared suppression, and energy absorption. Many commercial applications for these same qualities are expected at lower temperatures. Work on this project has included testing and qualification of the materials for potential applications, cost reduction, and the establishment of a full scale, high volume production capacity for high temperature aerogels.

Title III: *Advancing the*

4 **Lithium Ion Battery**
AFRL/RXME (937) 904-4373

Quallion LLC
Sylmar, CA 91342 (818) 833-2013

4 **Traveling Wave Tube Amplifiers for Space**
AFRL/RXME (937) 904-4366

L-3 Electron Technologies, Inc.
Torrance, CA 90505
(310) 517-6000

12 **Radiation Hardened Cryogenic Readout ICs**
AFRL/RXME (937) 656-4168

AMI Semiconductor
Pocatello, ID 83201
(208) 239-7083

10 **Integrated Advanced Composite Fiber Placement**
AFRL/RXME (937) 255-0064

ATK Space Systems, Inc.
Clearfield, UT 84016
(801) 775-1280

14 **Thin SOI Wafers**
AFRL/RXME (937) 255-3867

MEMC Electronic Materials, Inc.
St. Peter, MO 63376
(636) 474-5585

13 **Light-Weight Ammunition & Armor**
AFRL/RXME (937) 656-4168

MAC, LLC
Bay St. Louis, MS 39520-9078
(228) 533-0157

13 **Silicon Carbide Monolithic Microwave Integrated Circuit Devices**
AFRL/RXME (937) 904-4356

Cree, Inc.
Durham, NC 27703
(919) 313-5926

6 **Non-Aerospace Armor & Structure Transformation**
AFRL/RXME (937) 255-0064

Gautier Steel Specialty, LLC
Johnstown, PA 15901-2200
(814) 535-9200

10 **Low Cost Military GPS**
AFRL/RXME (937) 904-4373

Rockwell Collins
Cedar Rapids, IA 52406-0000
(319) 295-1524

11 **Mini-Refrigerant Compressors for Man-Portable Cooling**
AFRL/RXME (937) 904-4351

Aspen Compressor, LLC
Somerset, KY
(508) 281-5322, ext. 229

13 **Silicon Carbide Powder Production & Ceramic Armor Manufacturing**
AFRL/RXME (937) 904-4364

Superior Graphite
Hopkinsville, KY 42240
(312) 559-2999, ext. 2890

11 **Military Lens System Fabrication & Assembly**
AFRL/RXME (937) 656-4168

Optical Systems Technology, Inc.
Freeport, PA 16229
(724)295-2880, ext. 251

4 **Beryllium Production**
AFRL/RXMP (937) 904-4389

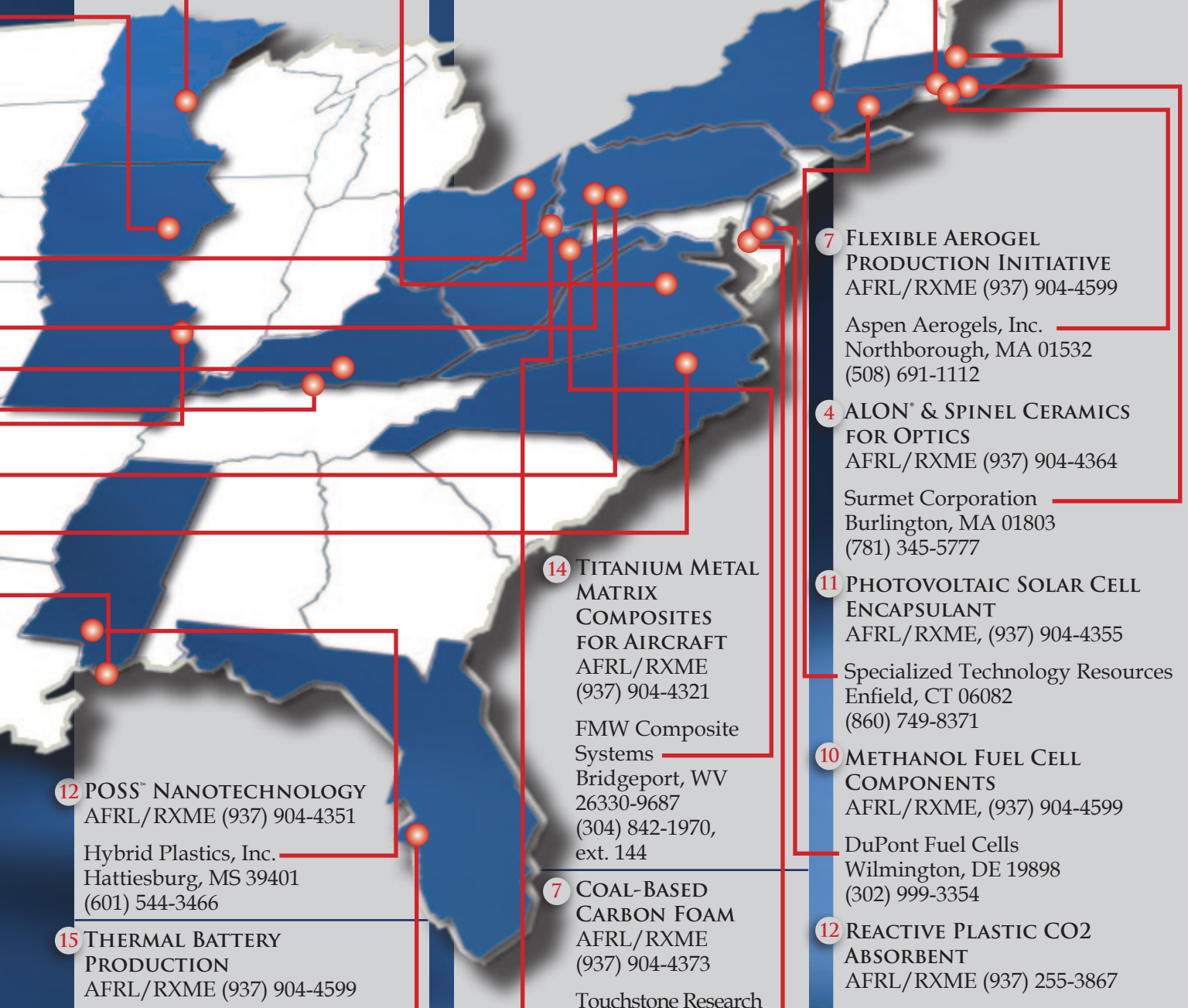
Brush Wellman, Inc.
Cleveland, OH 44110
(419) 862-4180

Map Key

13 = *Project Page Number*

= Contractor Location

Industrial Base, Nationwide



5 Radiation Hardened Capital Expansion (CAPEX)
AFRL/RXME (937)255-3867

BAE Systems
Manassas, VA 20110
(703)367-2343

Honeywell
Plymouth, MN 55441
(763)954-2548

15 Yttrium Barium Copper Oxide (YBCO) High Temperature Superconductors
AFRL/RXME (937) 904-4344

American Superconductor
Westborough, MA 01581,
(508) 621-4234

SuperPower, Inc.
Schenectady, NY 12304
(518) 782-1122

7 Continuous Filament Boron Fiber
ARFL/RXME
(937) 656-4168

Specialty Materials
Devens, MA 01434
(978) 842-3274

7 Flexible Aerogel Production Initiative
AFRL/RXME (937) 904-4599

Aspen Aerogels, Inc.
Northborough, MA 01532
(508) 691-1112

4 ALON® & Spinel Ceramics for Optics
AFRL/RXME (937) 904-4364

Surmet Corporation
Burlington, MA 01803
(781) 345-5777

14 Titanium Metal Matrix Composites for Aircraft
AFRL/RXME
(937) 904-4321

FMW Composite Systems
Bridgeport, WV
26330-9687
(304) 842-1970,
ext. 144

11 Photovoltaic Solar Cell Encapsulant
AFRL/RXME, (937) 904-4355

Specialized Technology Resources
Enfield, CT 06082
(860) 749-8371

10 Methanol Fuel Cell Components
AFRL/RXME, (937) 904-4599

DuPont Fuel Cells
Wilmington, DE 19898
(302) 999-3354

12 POSS™ Nanotechnology
AFRL/RXME (937) 904-4351

Hybrid Plastics, Inc.
Hattiesburg, MS 39401
(601) 544-3466

7 Coal-Based Carbon Foam
AFRL/RXME
(937) 904-4373

Touchstone Research Laboratory, Ltd.
Triadelphia, WV 26059
(304) 547-5800

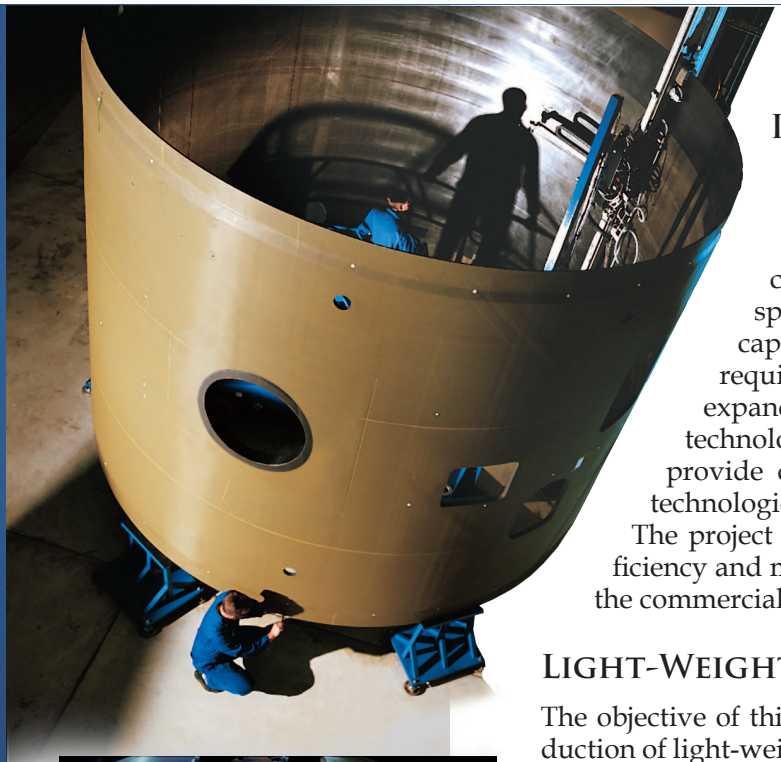
12 Reactive Plastic CO2 Absorbent
AFRL/RXME (937) 255-3867

Micropore, Inc.
Newark, DE 19702
(302) 731-4100 ext. 527

15 Thermal Battery Production
AFRL/RXME (937) 904-4599

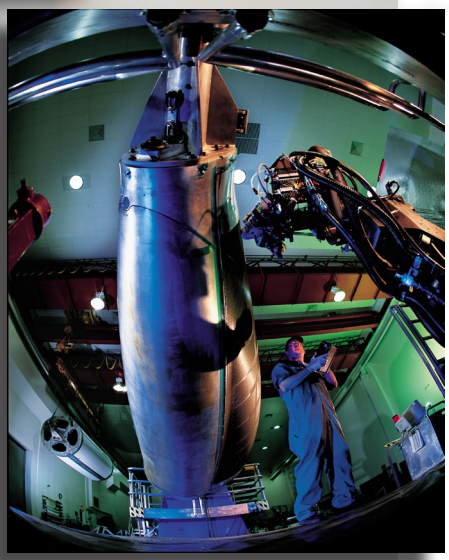
The Enser Corporation
Pinellas Park, FL 33781
(727) 520-1393

Title III Portfolio



Integrated Advanced Composite Fiber Placement

Current process/production rates for large aerospace composite products are slow and time consuming in comparison to expected demand. Significant aerospace industry growth and inadequate manufacturing capabilities could jeopardize the assembly demands required by the Department of Defense. This project will expand the domestic supply base for automated composite technologies, maximize processing/cost benefit ratios, and provide cost efficient fiber placement composite processing technologies for military and commercial aircraft structures. The project aims to increase commercially viable production efficiency and make the process enhancements generally available to the commercial composite production market.



Light-Weight Ammunition and Armor

The objective of this effort is to establish a domestic source for the production of light-weight ammunition cartridge casings using an ultra-high strength, melt-processible, isotropic, amorphous, rigid-rod, self-reinforcing polyparaphenylene material. Ammunition casings produced with this material provide significant advantages over traditional brass casings such as decreased combat carrying weight, increased muzzle velocities, improved weapons accuracy, better corrosion-resistance, lower cost and increased savings from production synergies as well as lower deployment and transportation cost.

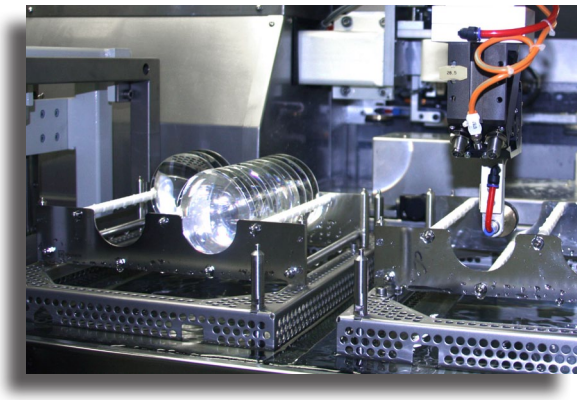
Low Cost Military Global Positioning System (GPS)

Military GPS receivers are a vital piece of equipment for soldiers on the battlefield. GPS receivers allow the Warfighter to perform both strategic and tactical maneuvers with a high degree of confidence of success. Without GPS receivers, soldiers are at a loss for both their specific positioning on the battlefield and that of their fellow soldiers. The primary objectives of this project are to create domestic production capabilities for essential subcomponents for the Defense Advanced GPS Receiver (DAGR), and to pursue methods for reducing their weight, size, power-consumption and cost, while improving performance capabilities.

Methanol Fuel Cell Components

As weaponry and armaments continue to become more sophisticated, employing larger quantities of power-consuming technology, soldiers are becoming overburdened by the need to carry more and more batteries. Military operations in Iraq and Afghanistan have highlighted the importance of reliable electrical power in mounted and dismounted soldier operations. Replacing batteries with methanol fuel cells as the power source of choice for the soldier has significant impacts on several key operations parameters. Unfortunately, due to low production volumes, manufacturing costs for methanol fuel cell membrane electrode assemblies remain high. This Title III project has developed low rate initial production capability, supporting increasing demand levels and reducing cost through increased production efficiencies.

Military Lens System Fabrication & Assembly



The Title III Program is establishing a domestic resource for mono-spectral and advanced multi-spectral optical systems and lens components. This effort will develop a manufacturing capability for design, fabrication, finishing, coating, assembly, and testing of mono and multi-spectral night vision optical systems that can be integrated into military and commercial surveillance systems. Multi-spectral systems are shared-aperture systems that allow widely separated wavelength bands to be transmitted through a common aperture and share common elements in the optical train. They offer considerable advantages for the Warfighter including weight and volume reduction by allowing the Warfighter to carry fewer pieces of equipment, improved performance by allowing both bands to utilize the full aperture of the systems, and optimized system design for a larger set of operating conditions/environments.

Mini-Refrigerant Compressors for Man-Portable Cooling

Title III is currently supporting an enterprise that will establish a domestic low-volume production facility for mini-refrigerant vapor compressors. The Program's industry partner recently purchased a production facility, and Title III is assisting with plant facilitization, to include the purchase of manufacturing, assembly and test equipment. Applications for personal cooling systems encompass aircrew cooling; soldier cooling (both dismounted and within ground vehicles); and personal protective equipment cooling, such as Explosive Ordinance Disposal and Chem/Bio-Hazard suits. The compactness of these mini-compressors enables them to be installed within electronics cabinets to provide active cooling of components. This increases the performance, reliability, and life of mission-critical electronics systems in high temperature environments.

Photovoltaic (PV) Solar Cell Encapsulant

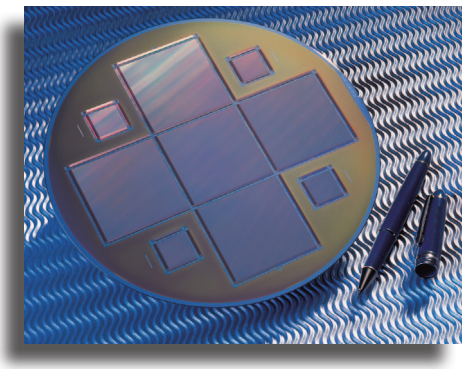
Photovoltaic Solar Cell Encapsulants are used to protect delicate PV modules and solar cells from natural elements while insulating the embedded electrical circuits. There has been insufficient domestic production capability for Ethylene Vinyl Acetate (EVA)-based PV solar cell encapsulant material to meet defense needs for military photovoltaic equipment applications. Key military applications using EVA-based encapsulant include portable power pack batteries, power for electronic and propulsion systems on high altitude airships and Unmanned Aerial Vehicles, power lighting and battery recharging shelters, and PV systems on military installations to reduce energy consumption. The Title III Program expanded domestic production of PV solar cell encapsulant material to meet DoD requirements.

Title III Portfolio

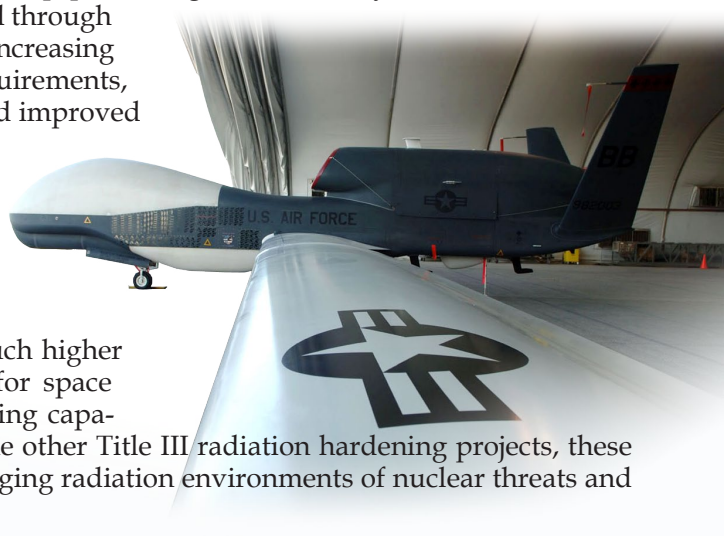
POSS® Nanotechnology

This project is scaling up production of Polyhedral Oligomeric Silsesquioxanes (POSS®), a nano-sized material that, when used as a chemical additive, can greatly enhance the performance of polymers for a variety of DoD and commercial applications. POSS® has been demonstrated as useful in applications such as radiation shielding for space-based microelectronics, coatings that prevent growth of tin whiskers on lead-free solder, photoresist material for semiconductor manufacturing, automotive fuel filters, food packaging, optical lenses, and aircraft tires.

Radiation Hardened Cryogenic Readout Integrated Circuits (ROICs)



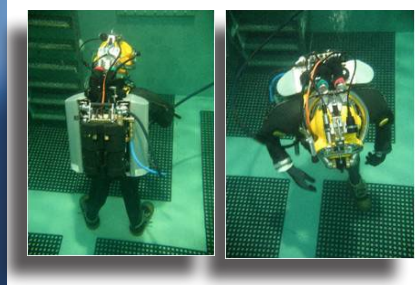
Title III resources are being utilized to establish a viable, domestic foundry for commercial production of less than or equal to 0.35 micron, deep sub-micron Complementary Metal Oxide Semiconductor (CMOS) ROICs. ROIC microelectronics are a critical technology employed in the manufacture of focal plane arrays (FPAs) that are utilized in high altitude and space-based imaging and missile systems. The next generation imaging requirements are dependent on the availability of advanced ROICs that provide high density with analog components, smaller pixels (increased resolution), and increased functionality through on-chip processing. Additionally, ROICs need to be physically larger (enabled through stitching technology) for increasing focal plane array size requirements, reduction of particle counts that improve production yields, and improved fabrication cycle times. All of these improvements will collectively increase the mission capability of the systems.



Radiation Hardened Microprocessors

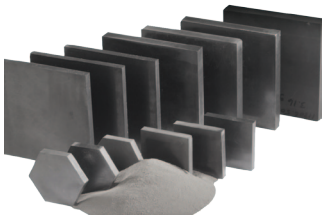
This Title III project is scaling up production capacities for high performance radiation hardened microprocessors with a progression from radiation tolerant to radiation hard. The much higher clock rates will lead to significant cost and weight savings for space systems. Higher performance means greater on-orbit processing capabilities and reduced ground support requirements. As with the other Title III radiation hardening projects, these microprocessors will enable spacecraft to operate in the challenging radiation environments of nuclear threats and long-term natural radiation.

Reactive Plastic CO_2 Absorbent



Reactive plastic CO_2 absorbent material is a technology that secures the CO_2 absorbing material to a plastic sheet in a polymer matrix bond. This material is an important resource for national defense. It is utilized primarily in military scuba, submarines, space, and an array of homeland security applications to "clean" CO_2 from air needed for breathing. This technology is driven by the Navy, which seeks to utilize the advantages of reactive plastic CO_2 absorbent in rebreather gear. These advantages include stealth diving capabilities (i.e., no bubbles from the rebreather) with extended diving durations and reduced breathing effort by the divers. Other applications include medical, fire rescue, and mining operations where an inherently high risk of CO_2 exists. Title III is supporting efforts to increase the domestic production capacity of Reactive Plastic Carbon Dioxide (CO_2) absorbent material.

Title III Portfolio

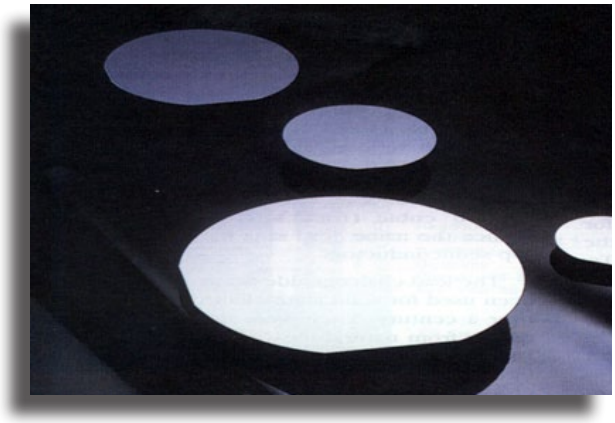


Silicon Carbide Powder Production and Ceramic Armor Manufacturing

High purity silicon carbide (SiC) powder, specifically submicron alpha SiC powder, is a critical item for national defense. This refined form of SiC powder is the key ingredient required to produce high quality, light weight, and cost effective SiC ceramic armor for the Warfighter. Primary applications include armor for land and air vehicles associated with the Army's Future Combat Systems program, armor for naval ships, lightweight armor for helicopters and other aircraft, and lightweight body armor. This Title III project is increasing the domestic production capacity for both submicron alpha SiC powder and SiC ceramic armor.

Thermal Battery Production

The objective of this Title III initiative is to strengthen and expand a domestic source for advanced thermal batteries. Military unique, high performance batteries are the only viable power source for many defense systems. The Missile Defense Agency and Service program offices have identified several high performance battery technologies for which there is insufficient availability or producibility to meet known and planned program requirements. The Title III Program is incentivizing a domestic company for production scale up and capacity expansion efforts. The applicability of these batteries to a wide variety of DoD weapons systems offers Army, Navy, and Air Force program offices the ability to greatly enhance system performance.



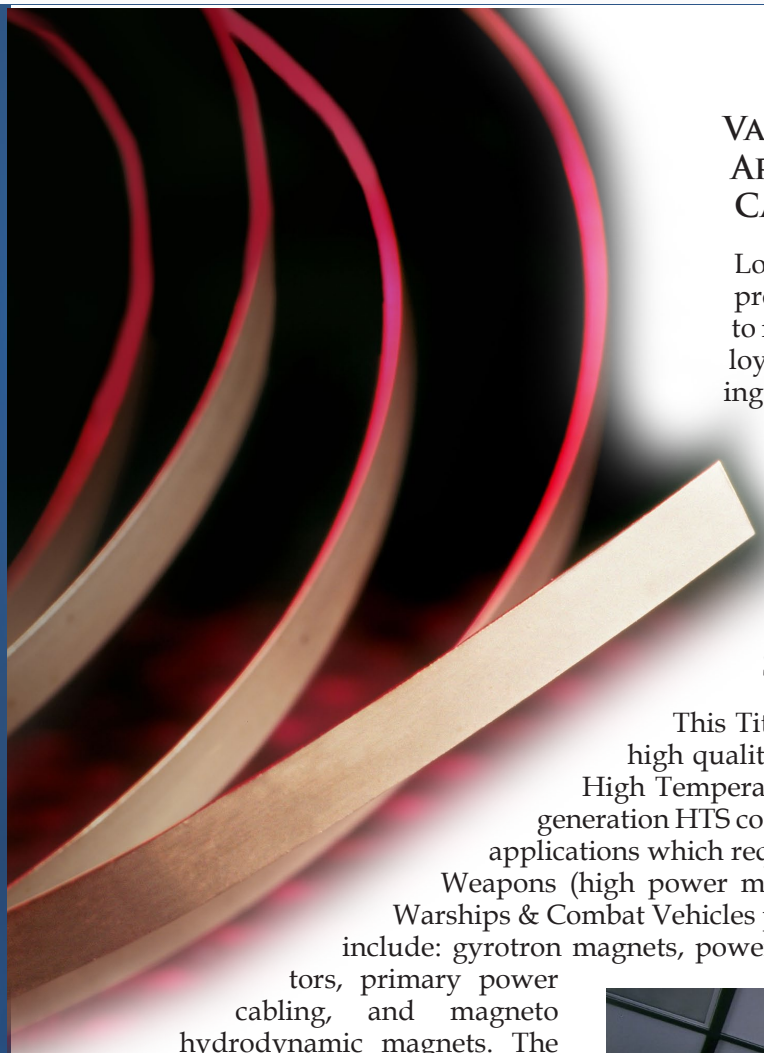
Thin Silicon-On-Insulator (SOI) Wafers

Thin Film SOI electronic wafers are key materials that enable the fabrication of radiation-hard, ultra large scale digital devices such as microprocessors, application-specific integrated circuits, and static random access memories. These radiation hard circuits fabricated with SOI materials are essential to defense systems, communication and navigation satellites, ballistic missiles, surveillance systems, and inertial navigation systems. They provide technology for sensitive ultra-low power space and battery-powered applications due to reduced power requirements, increased device density, and faster device performance over circuits fabricated in bulk substrate technologies. Title III support established a domestic full-scale production capability for thin SOI wafers.

Titanium Metal Matrix Composites (TiMMCs)

TiMMCs offer material properties that enable aircraft designers to engineer components that are stronger, lighter, and more durable than existing steel and pure titanium components. These improvements can expand U.S. air superiority margins over opposition forces by increasing lethality for U.S. munitions, increasing survivability for the Warfighter, and ultimately increasing mission success rates. Title III funding will enable expansion of the domestic production capacity of TiMMCs to support the Warfighter and assist the development of a database of TiMMC material characteristics and the processes required to produce TiMMCs.

Title III Portfolio



Vacuum Induction Melting, Vacuum Arc Remelting (VIM-VAR) Furnace Capacity

Low alloy VIM-VAR steel is a highly refined steel that is processed through multiple melts under vacuum in order to reduce excess gases and other impurities. VIM-VAR alloy steel is essential for many military applications including engine bearings, helicopter rotor shafts, transmission gears and engine mounts. This initiative to increase VIM-VAR capacity will reduce the order lead times and ensure the domestic supply of clean alloy steels for critical military components.

Yttrium Barium Copper Oxide (YBCO) High Temperature Superconductor

This Title III venture was aimed at establishing large volume, high quality, domestic production capacity for second-generation High Temperature Superconductor (HTS) coated conductor. Second-generation HTS coated conductor is the key component for several defense applications which require high electrical power, principally Directed Energy Weapons (high power microwaves and electrically driven lasers) and Electric Warships & Combat Vehicles programs. Components that use HTS coated conductor include: gyrotron magnets, power generators, power converters and transformers, motors, primary power cabling, and magneto hydrodynamic magnets. The project established two domestic sources for YBCO coated conductor, making the benefits of second-generation HTS available 5-7 years earlier than might otherwise have been feasible.

Title III Opportunities

Learn more About Title III

Interested in learning more about the DPA Title III Program? Review this brochure thoroughly to understand the nature of Title III projects and their direct applications to national security production capabilities. Title III is very focused on the business as well as the technical attributes of any potential project. The project's long term viability to assure the military's access to affordable products is crucial. If your company has a sufficiently mature technology in or nearing production, then Title III might be for you. The following guidelines will assist you in determining your company's potential for Title III involvement. Resources for additional information are also provided.

Online

Visit the DPA Title III website for current information: http://www.acq.osd.mil/ott/dpatitle3/. The site can direct you to the Title III Program's Broad Area Announcement (BAA) that is used for solicitations for Title III projects. Besides giving you an opportunity to see what current solicitations ("Calls") are on-going, the BAA site will enable you to sign up for direct notifications of new Title III BAA Calls.

Request for Information

Watch for the Title III Request For Information (RFI) announcement to be published in January through the FedBizOpps website: http://fedbizopps.gov/. The DPA Title III Program Office conducts a periodic Title III RFI that provides industry the opportunity to identify critical technology and industrial base needs. These industry responses facilitate Title III discussions with Program Executive Officers/Program Managers (PEOs/PMs) with a stake in essential production capacity. In the RFI, the Air Force, as Executive Agent for the Defense Production Act (DPA) Title III Program, invites industry to provide information on potential topics for the DPA Title III Program. Industry responses to the RFI are then assessed and may assist in identifying potential future Title III actions during the period of government fiscal years 2011-2015. Responding to the RFI is a significant undertaking, as the information requested is detailed and lengthy.

In Person

Attend the Defense Manufacturing Conference to discuss Title III opportunities in more depth. Each year, the DPA Title III Program participates in the Defense Manufacturing Conference, usually held in early December. The Program has an exhibit at the Conference, as do many of the Title III contractors. This Conference provides a unique opportunity for individual discussions with program officials and Title III industry partners who can answer any questions you may have about the Program. See the Title III website for updates about Title III at the Defense Manufacturing Conference.

Important Websites

DPA Title III website;
http://www.acq.osd.mil/ott/dpatitle3/

FedBizOpps website:
http://fedbizopps.gov/

For the 2008 Defense Manufacturing Conference:
http://www.dmc2008.com/index.html

Contact Information

OSD
Title III Program Director
DUSD (AS&C)
Office of Technology Transition
703-607-5314
ATLDPAT3@osd.mil

Air Force Executive Agent
Air Force DPA Title III Program Office
937-904-4382

There is no guarantee that any submitted topic will become a Title III project, and responders to the RFI will have no competitive advantage in receiving awards related to the submitted topic area. The information submitted in all responses may be utilized to help the Government further define its requirements. If the Government develops a Title III project that addresses any submitted or similar topic, the resulting procurement will address technology and business specific requirements as defined by the Government to achieve Title III objectives.

DEFENSE PRODUCTION ACT

TITLE III

THANK YOU FOR YOUR INTEREST
IN THE TITLE III PROGRAM

http://www.acq.osd.mil/ott/dpatitle3/